REMARKS

Claims 1-14, 16-38, 48, and 49 are pending in the present application. Claims 1 and 48 have been amended herein, for clarification. New claim 49 has been added. Support for the amendments to claims 1 and 48 is provided in the claims, e.g., canceled claim 15 and in the specification, e.g. page 9, lines 21-23. New claim 49 includes the elements of claims 1, 7, and 10. No new matter has been entered.

Claims 1-38 and 48 were rejected under 35 U.S.C. 102(b) as being anticipated by Murphy et al (US 6,122,909). This rejection is respectfully traversed.

Claims 1 and 48

Claims 1 and 48 are directed to a device comprising a NOx removal system for removing nitrogen oxides from a nitrogen oxide containing combustion exhaust, wherein the NOx removal system comprises, *inter alia*, a NO_X treatment section, a diverter, and a hydrogen generation section. The diverter is configured to enable delivery of water to the hydrogen generation section, and is further configured to extract water from the combustion exhaust.

Murphy fails to teach, *inter alia*, a diverter configured to extract water from a combustion exhaust as recited in claims 1 and 48. Referring to Fig. 1 of Murphy, Murphy teaches a water reservoir 48, which may act as a separator for oxygen and water. (col. 10, lines 17 and 18). The reservoir 48 may receive a feed of entrained water and oxygen from the electrolyzer 50. (col. 10, liens 23-26). In separation, water and oxygen are separated in the reservoir 48 by gravity draining, wherein water flows out though the bottom of the reservoir 48, while the oxygen remains in the reservoir 48. (col. 10, lines 21-23). Murphy provides no teaching that the reservoir 48 is operable to extract water from a combustion exhaust as recited in claims 1 and 48. Moreover, Murphy's reservoir 48 is coupled to an electrolyzer 50, for example, a PEM electrolyzer, which does not conduct a combustion reaction. Consequently, it stands to reason that Murphy's reservoir cannot extract water from a combustion exhaust, when the reactor is not in communication with a combustion reactor or engine. Accordingly, Murphy fails to teach all elements of claims 1 and 48, and all claims dependent thereon.

Claim 49

Claim 49 is directed to a device comprising a NOx removal system for removing nitrogen oxides from a nitrogen oxide containing combustion exhaust, wherein the NOx removal system comprises, *inter alia*, a NO_X treatment section, a diverter, and a hydrogen generation section. The NOx treatment section defines at least two independent NOx treatment zones. The claim also recites that the NOx removal system is configured to deliver the exhaust to one of the independent NOx treatment zones on a selective basis.

Referring to Fig. 1 of Murphy, Murphy teaches two NOx adsorbers 30 and 31 operating in series downstream of the engine exhaust 42. In Murphy, the engine exhaust 30 or 31 is fed through *both NOx adsorbers*. The outlet stream of NOx adsorber 30 is the inlet stream of NOx adsorber 30, consequently, the NOx adsorbers are interrelated not independent as recited in claim 49. Moreover, there is no teaching that the Murphy system may deliver the exhaust to one of the independent NOx treatment zones **on a selective basis** as recited in claim 49. As a result, Murphy fails to teach all elements of claim 49.

Accordingly, Murphy does not anticipate claims 1, 48, and 49 and all claims dependent thereon under §102(b). The Applicants respectfully submit that, in view of the above remarks and amendments, the application is now in condition for allowance. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, early notification of allowable subject matter is respectfully requested.

Respectfully submitted,

DINSMORE & SHOHL LLP

By /Matthew A. Molloy/
Matthew A. Molloy
Registration No. 56,415

One Dayton Centre
One South Main Street, Suite 1300
Dayton, Ohio 45402
Telephone: (937) 449-6400
Facsimile: (937) 449-6405
E-mail: matthew.molloy@dinslaw.com
MAM/ems